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## A New Clavigerine Genus, *Micrellytriger* (Coleoptera, Staphylinidae, Pselaphinae), from Taiwan and Japan

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**Abstract** A Clavigerine genus, *Micrellytriger*, is newly defined, and its three new species, *mirabilis*, *nakatai* and *loebli* are described from Taiwan and the Ryukyus, Japan.

**Key words:** Staphylinidae, Pselaphinae, *Micrellytriger* gen. nov., new species, Taiwan, Japan.

### Introduction

As to the supertribe Clavigeritae, three genera have been known from East Asia according to Newton and Chandler (1989), namely, *Anaclasiger* Raffray and *Triartiger* Kubota from Taiwan, and *Diartiger* Sharp from Japan. In this study, a new genus *Micrellytriger* is defined, and three new species, *mirabilis* and *nakatai* from the Ryukyus, Southwest Japan and *loebli* from Taiwan are described.

Gen. *Micrellytriger* nov.

[Japanese name: Kobane-arizukamushi-zoku]

Type species: *Micrellytriger mirabilis* sp. nov.

Body small-sized, head and thorax shortened, abdomen very large, occupying a half of the body in length. Head short, nearly ovoid, antennae longer than head, 4-segmented, elongate and thickened distally, 1st segment very short, almost invisible in dorsal view, 2nd short, subglobose, 3rd longer than 2nd, conical, 4th the largest and conical, broadened distally and truncate at apex. Pronotum about as long as head, subglobose, covered with fine reticulation. Elytra very short, as long as pronotum or slightly longer, each elytron about as long as wide, shallowly concave at postero-median part, with a conical trichome on posterior margin. Legs short, hind leg never reaching hind margin of abdomen, trochanters very long and elongate, femora thickened medially, mid femora each with a broad and shallow longitudinal groove on posterior side, and a large and curved spine on dorsal side of the groove and a longitudinal carina on ventral side in male, two longitudinal carinae in female, tibiae each elongate, narrowed at base, swollen medially, carinate on inner side, tarsi short and slender. Abdomen very large,

strongly convex on dorsal surface, 3rd to 6th tergites fused to each other to form a large and ovoid composite tergum, with a large and deep longitudinal depression at basi-median part, a pair of broad longitudinal carinae at the sides of the depression, and a pair of basi-median trichomes, each extending to form a transverse fringe in anterior part, and projected antero-dorsally in posterior part, 3rd to 6th paratergites fused to form a pair of elongate composite paraterga, each paratergum with a paratergal trichome at base, and an indistinct paratergal disc behind the trichome, 7th tergite short and trapezoidal, 8th small and triangular, 3rd to 4th sternites undemarkable, largest and almost flat in median part, 5th to 8th successively shortened posteriad, each short and transverse. Aedeagus almost symmetrical, parameres indistinct, median lobe divided into basal bulb and apical lobe by weak and transverse constriction, endophallus weakly sclerotized.

*Remarks.* This new genus is similar to *Diartiger* Sharp in having the four-segmented antennae. It is characterized by some derived characters, namely, the strongly shortened elytra, very large composite abdominal tergum (3rd to 6th tergites) with a broad longitudinal depression, and the 3rd to 6th sternites with linear sculpture. Also, it has relatively primitive characters, the nearly ovoid head with the rounded postgenae, and the large apical lobe of the median lobe of aedeagus, in contrast to the aedeagus of *Diartiger fossulatus* Sharp having the strongly reduced apical lobe.

This genus comprises three species newly described below.

*Etymology.* The generic name “*Micr-elytr-i-ger*” is constructed from the prefix “*micro-*” meaning “small”, the latin term “*elytra*” and the suffix “*-ger*”, the latter of which, traditionally used as a suffix of the generic name of the supertribe Clavigeritae sensu Newton and Thayer (1995), is derived from the latin verb, “*gero*” meaning “carry”. Therefore, this compound generic name means “someone carrying small elytra”, which is designated as a masculine noun as the oldest generic name *Claviger* is treated.

*Micrelytriger mirabilis* sp. nov.

[Japanese name: Kobane-higebuto-arizukamushi]

(Figs. 1, 2 A–B, 3 A–B, 4 A, 5 A, 6 A–C)

*Male* (Fig. 1). Length 1.50 mm. Width 0.59 mm. Body reddish brown to dark brown, widest at the middle of abdomen, then narrowed anteriorly.

Head longer than wide, nearly ovoid in dorsal view, covered with fine and irregular reticulation on dorsal surface, clypeus very short, lamellar and arcuate on anterior margin, frons roundly convex, triangular in anterior part in dorsal view, gently narrowed anteriad on both sides, vertex gently convex, with a pair of dorsal tentorial pits just inside eyes, postgena broad, slightly rounded in dorsal view. Eyes small and ovoid, each composed of about 12 facets. Antennae (Fig.

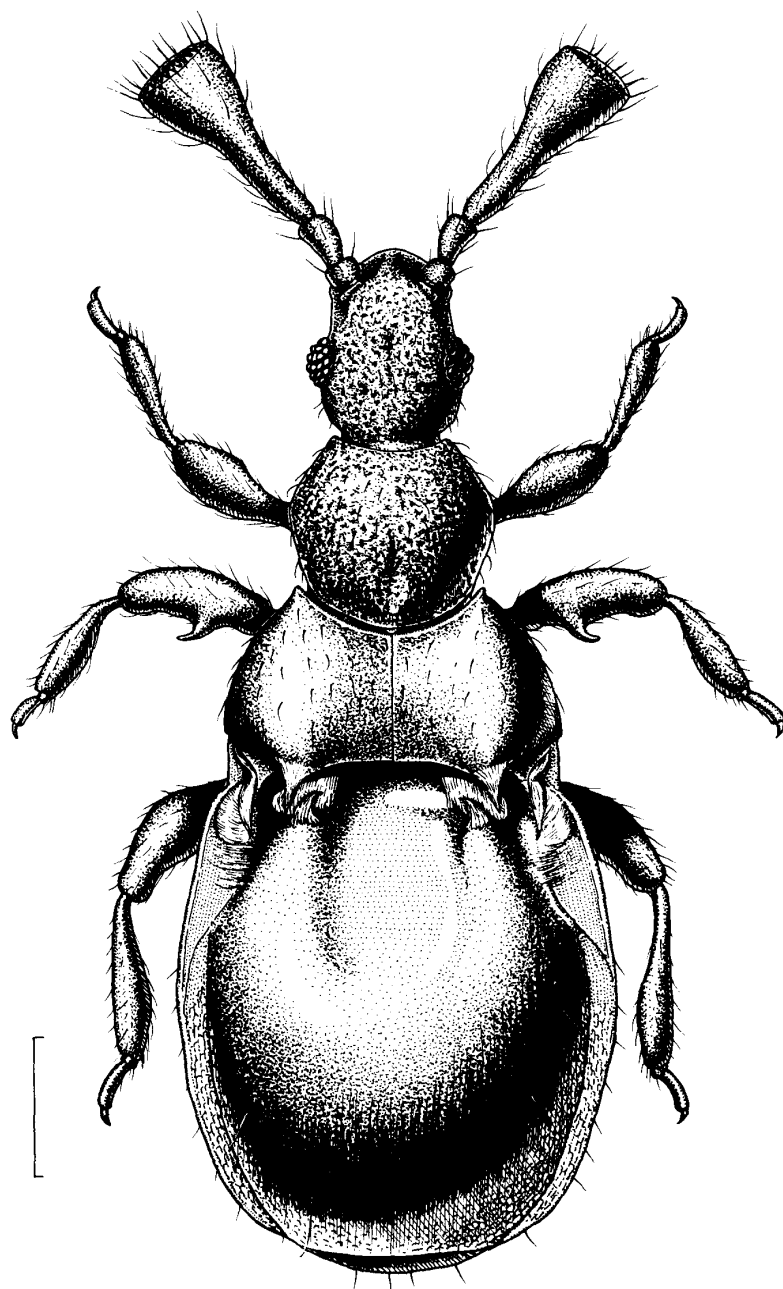


Fig. 1. *Micrellytriger mirabilis* gen. et sp. nov., habitus (scale: 0.2 mm).

2 A) longer than head, reaching anterior margin of pronotum, 0.39 mm in length, 0.10 mm in width, 1st segment very short and annular, invisible in dorsal view, 2nd short and subcylindrical, slightly wider than long, 3rd slightly longer than wide, nearly ovoid and thickened distally, 4th the largest, 3.5 times as long as 3rd, elongate, slightly broadened apicad in basal half, then strongly thickened in apical half, truncate at apex, sparsely covered with long setae on lateral side, densely

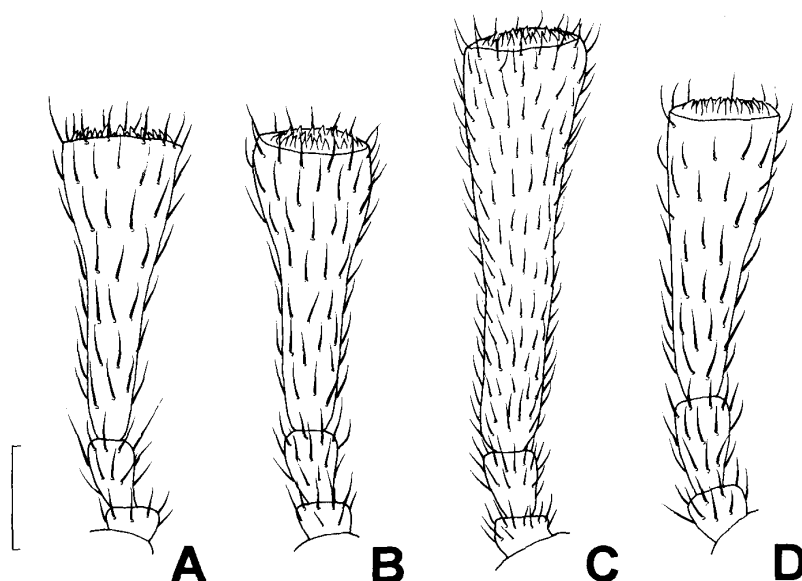


Fig. 2. Second to fourth antennal segments of *Micrellytriger mirabilis* gen. et sp. nov., male (A) and female (B), *M. nakatai* sp. nov., male (C) and *M. loebli* sp. nov., male (D) (scale: 0.1 mm).

with short setae at apex, relative length (width) of each segment from base to apex: 0.1 (0.3): 0.2 (0.3): 0.6 (0.3): 2.2 (0.8).

Pronotum globular, slightly wider than long, with a basi-median and a pair of basi-lateral shallow depressions, densely covered with coarse and irregular reticulation. Elytra (Figs. 4 A, 5 A) strongly shortened, arcuately emarginate on anterior margin, humeli rounded, broadened posteriorly, weakly depressed in postero-median part, sparsely covered with short and bold hairs, each elytron limbate on anterior margin, roundly expanded at postero-lateral part, and with a conical trichome just behind the expansion. Metasternum short and transverse, covered with longitudinal linear sculpture in lateral part. Legs short, mid femora (Fig. 3 A) very thick, each slightly bent and weakly swollen mediad, with a large and outcurved spine at basal 2/5 on postero-dorsal side.

Abdomen very large, longer than wide, widest at middle, composite tergum (Figs. 4 A, 5 A) glabrous in basal part, sparsely covered with long hairs in posterior part, with a large and deep longitudinal depression in basi-median part, a pair of basi-median trichomes on basal side of the depression, composite paraterga each narrow and broadened basally, with a large longitudinal trichome at base, 7th tergite transverse and trapezoidal, slightly convex, 8th tergite transverse and triangular, 3rd to 4th sternites strongly constricted at base, densely covered with linear sculpture in postero-lateral part, 5th slightly shorter than 3rd + 4th, densely covered with linear sculpture, 6th about a half as long as 5th, sculptured as in 5th, 7th slightly shorter than 6th, arcuately emarginate on hind

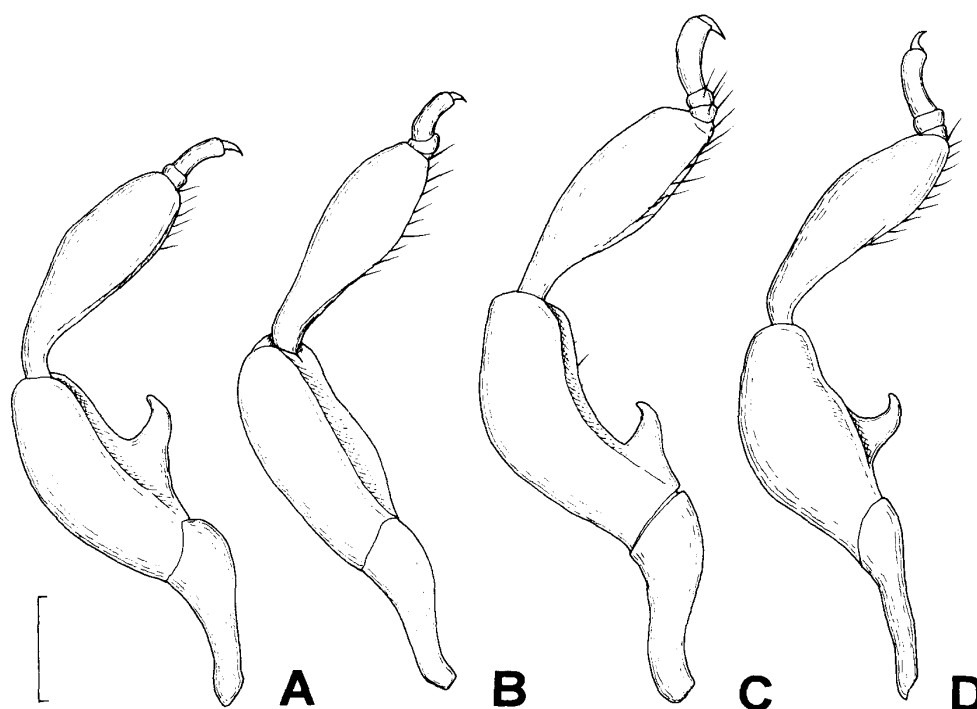


Fig. 3. Mid legs of *Micrellytriger mirabilis* gen. et sp. nov., male (A) and female (B), *M. nakatai* sp. nov., male (C) and *M. loebli* sp. nov., male (D) (scale: 0.1 mm).

margin, densely covered with round punctures, 8th sternite small and semicircular, almost flat in median part, punctate as in 7th.

Aedeagus (Fig. 6 A–C) well sclerotized; median lobe elongate and slender, basal bulb thickened basally and subparallel-sided, with a small and well projected basal nodule and a pair of longitudinal carinae on ventral side, each running from outer corner of the basal nodule to lateral base of apical lobe, and with a small and ovoid membranous part on dorsal side, apical lobe tongue-shaped, weakly curved ventrad, narrowed distally and rounded at apex, with a large and ovoid apical orrifice, endophallus weakly sclerotized, composed of 2 elongate spines.

*Female.* Length 1.59–1.61 mm. Width 0.63–0.65 mm. Similar to male; antennae (Fig. 2 B) 0.38–0.39 mm in length, 0.10 mm in width; mid femora (Fig. 3 B) short and thick, without spine.

Holotype ♂ (preserved in National Science Museum, Tokyo), Mt. Yuwandake, Amami-Oshima Is., Kagoshima Pref., Southwest Japan, 16. ix. 1996, S. Onoda leg. Paratypes: 1 ♀, same locality as holotype, 8. v. 1987, S. Nomura leg.; 1 ♀, same locality as above, 15. v. 1996, S. Onoda leg.; 1 ♀, same locality as above, 15. ix. 1996, S. Onoda leg.; 1 ♀, Kinsakubaru, Naze C., Amami-Oshima Is., Kagoshima Pref., 17. ix. 1996, S. Onoda leg.; 1 ♀, Miyanoura, Kamiyaku-chô, Yakushima Is., Kagoshima Pref., 25. iv. 1985, T. Tanabe leg.

*Distribution.* Japan (Yakushima Is., Amami-Oshima Is.).

**Remarks.** This new species is very distinct in having strongly shortened elytra each with a round expansion and the strongly thickened fourth antennal segment in the apical part.

**Etymology.** The new specific name “*mirabilis*” represents my amazement at the eccentric appearance of this species when I found the first specimen in Dr. Tanabe’s collection.

***Micrelytriger nakatai* sp. nov.**

[Japanese name: Okinawa-kobane-higebuto-arizukamushi]

(Figs. 2 C, 3 C, 4 B, 5 B, 6 D–F)

**Male.** Length 1.61 mm. Width 0.63 mm. Body reddish brown, similar to *mirabilis* in dorsal view, but larger than *mirabilis*.

Head similar in structure to that of *mirabilis*, frons strongly convex, triangular and carinated in anterior part, broad and subparallel-sided in basal part, vertex weakly convex, with a pair of indistinct dorsal tentorial pits inside eyes, postgena broad, slightly narrowed posteriad in dorsal view. Eyes small, ovoid and gently convex, each composed of 13 facets. Antennae (Fig. 2 C) longer and bolder than in the other species, reaching anterior part of pronotum, 0.50 mm in length, 0.11 mm in width, densely covered with bold setae, 1st segment short, subcylindrical, partially visible in dorsal view, 2nd short, transverse and subcylindrical, 3rd twice as long as 2nd, longer than wide, gently thickened distad, more than 3 times as long as wide, relative length (width) of each segment from base to apex: 0.2 (0.4): 0.2 (0.4): 0.6 (0.5): 3.0 (0.9).

Pronotum similar to that of *mirabilis*. Elytra (Figs. 4 B, 5 B) short and transverse, sparsely covered with stout pubescence, each elytron strongly projected on dorso-lateral part, with an indistinct basal fovea and a longitudinal sulcus along median line, elytral trichome very large and strongly thickened verticad. Metasternum broad and transverse, densely covered with longitudinal linear sculpture in lateral part. Legs short and thick, similar in structure to those of *mirabilis*, mid femora (Fig. 3 C) each strongly bent, with a short and outcurved spine near the base on postero-dorsal side.

Abdomen very large, longer than wide, nearly ovoid, widest at middle, constricted at base, composite tergum (Figs. 4 B, 5 B) strongly convex at the center, with a large and deep longitudinal depression in basi-median part, scarcely punctate and shiny, sparsely covered with short and bold hairs, densely with fine reticulation on apical surface, basi-median trichomes each very thick, composite paraterga each narrow, paratergal trichome thick, well projected and elongate, paratergal disc indistinct, nearly fusiform, 7th to 8th tergites covered with fine reticulation, 7th transverse and trapezoidal, slightly convex, 8th tergite transverse and triangular, 3rd to 4th sternites large and transverse, covered with linear

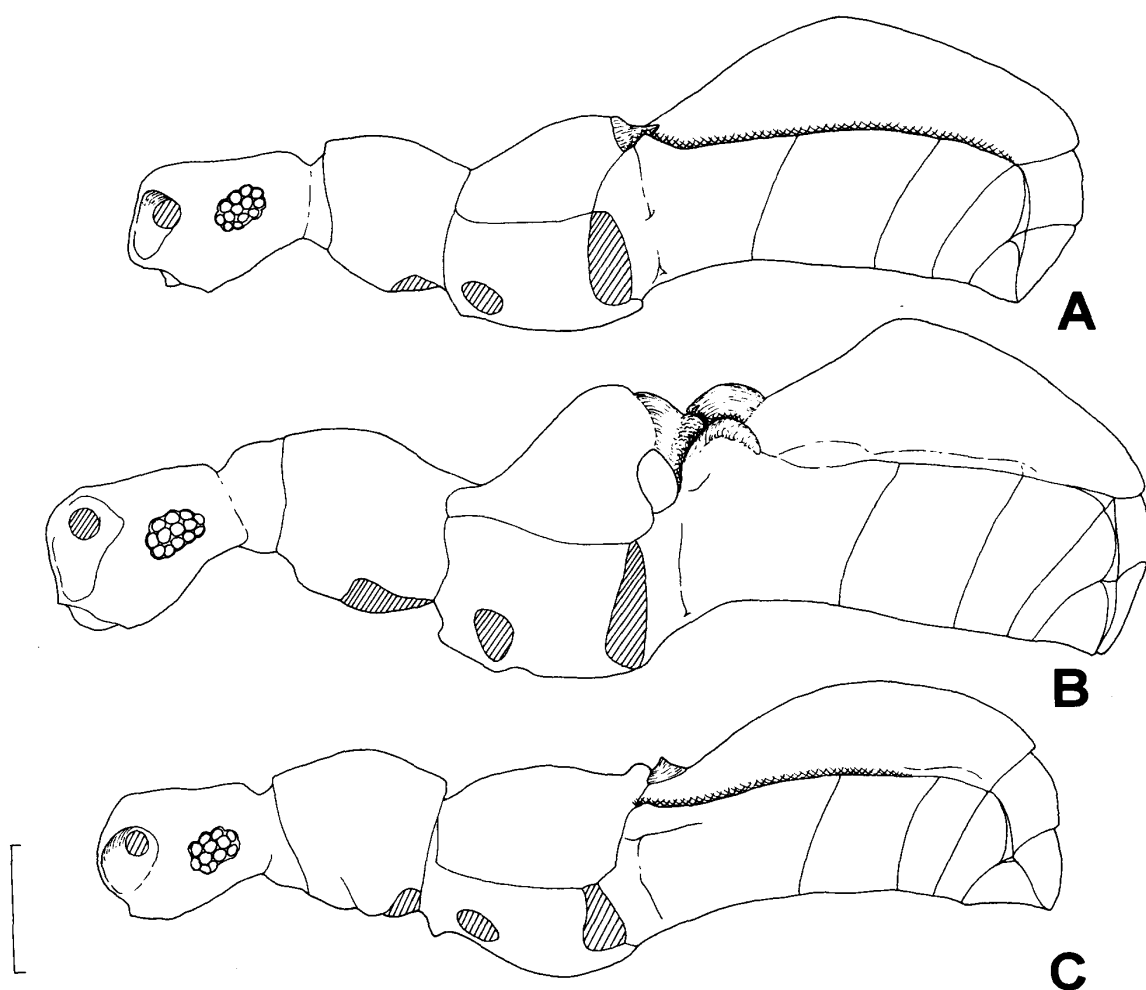


Fig. 4. Male lateral aspects of *Micrellytriger mirabilis* gen. et sp. nov. (A), *M. nakatai* sp. nov. (B) and *M. loebli* sp. nov. (C) (scale: 0.2 mm).

microsculpture, 5th slightly shorter than 3rd + 4th, with longitudinal linear sculpture, 6th to 8th each short and transverse, densely covered with fine reticulation, 6th about a half as long as 5th.

Aedeagus (Fig. 6 D–F) well sclerotized, slightly longer and slenderer than in *mirabilis*; median lobe elongate and slender, basal bulb elongate, weakly narrowed distad, with a less projected basal nodule on ventral side than in *mirabilis* and an ovoid membranous part on dorsal side, apical lobe narrower than in *mirabilis*, less curved ventrad in apical part than in *mirabilis*; endophallus weakly sclerotized, consisting of 2 very slender and gently bent spines and connective membrane.

*Female.* Unknown.

Holotype ♂ (preserved in National Science Museum, Tokyo), Ie-rindoh, Kunigami-son, Okinawa Pref., Southwest Japan, 17. ii. 1997, K. Nakata leg.

*Distribution.* Japan (Okinawa-hontô Is.).

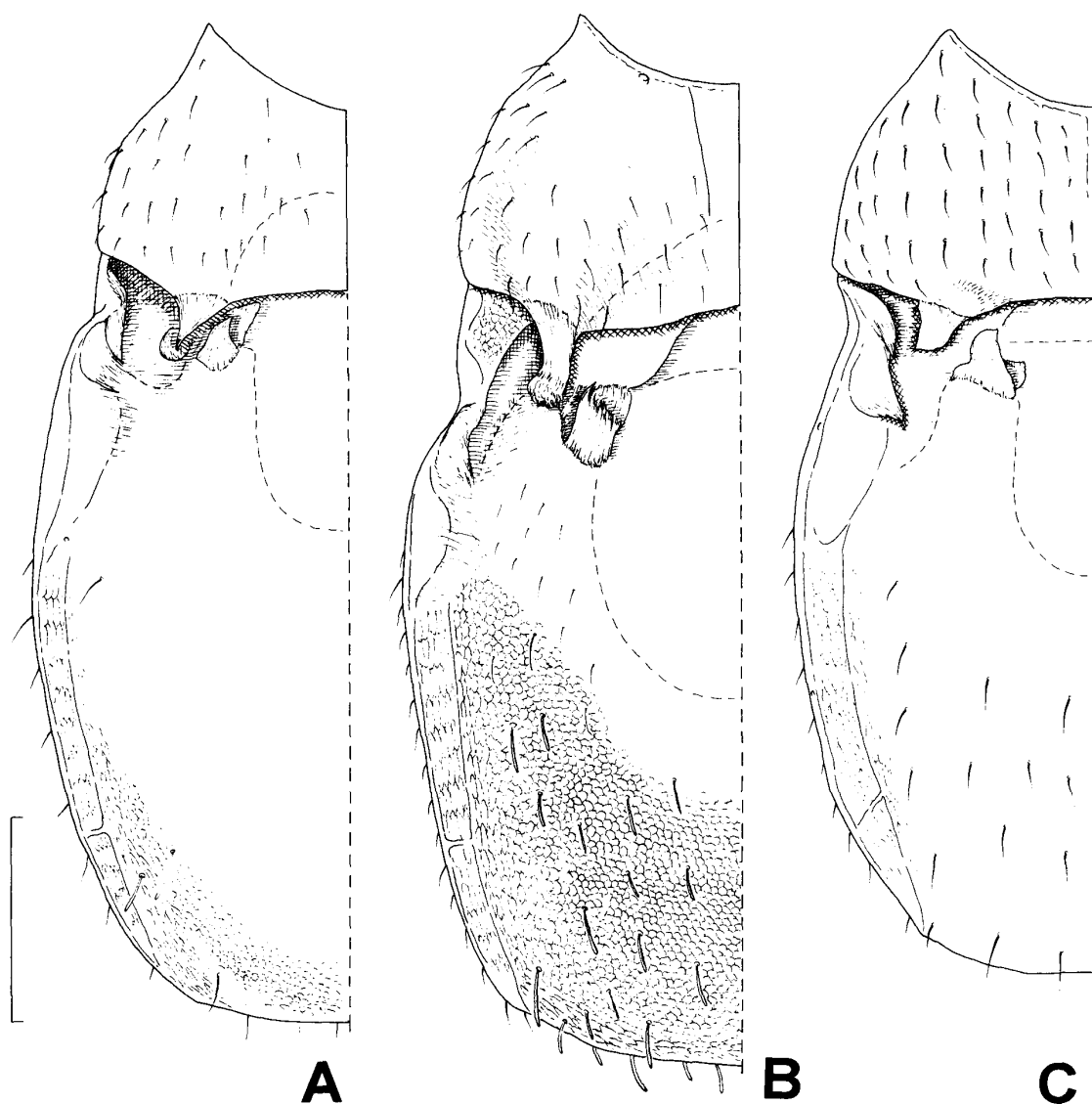


Fig. 5. Male elytral and abdominal structure of *Micrelytriger mirabilis* gen. et sp. nov. (A), *M. nakatai* sp. nov. (B) and *M. loebli* sp. nov. (C) (scale: 0.2 mm).

**Remarks.** This new species is easily distinguished from the other species by having the longer antennae and the dorso-laterally projected elytra each with a vertically thickened trichome.

**Etymology.** The new species name is associated with the collector of the holotype, Mr. Katsuyuki Nakata, who is a young and active amateur entomologist and a good friend of mine.



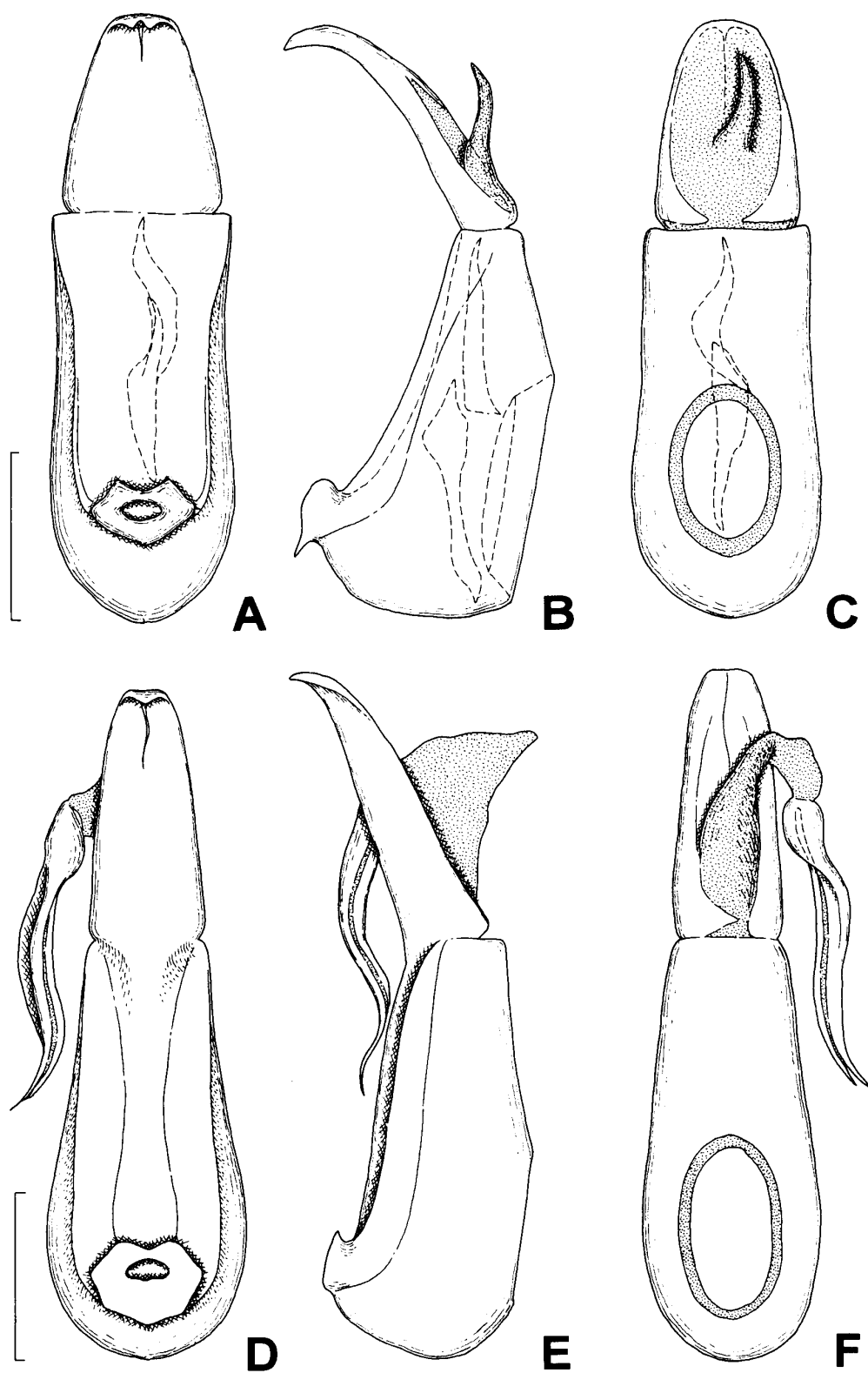


Fig. 6. Aedeagi of *Micrellytriger mirabilis* gen. et sp. nov. (A–C) and *M. nakatai* sp. nov. (D–F). — A, D, Ventral view; B, E, lateral view; C, F, dorsal view (scales: 0.1 mm).

*Microlytriger loebli* sp. nov.

[Japanese name: Taiwan-kobane-higebuto-arizukamushi]

(Figs. 2 D, 3 D, 4 C, 5 C, 7)

**Male.** Length 1.45–1.55 mm. Width 0.54–0.61 mm. Body reddish brown, widest at about posterior 1/4, then gently narrowed anteriorad.

Head similar in structure to that of *mirabilis*, frons roundly convex, triangular in anterior part, subparallel-sided in basal part, vertex gently convex, with a pair of indistinct dorsal tentorial pits just inside eyes, postgena broad, slightly narrowed posteriorad in dorsal view. Eyes small and ovoid, each composed of about 12 facets. Antennae (Fig. 2 D) 0.41 mm in length, 0.10 mm in width, 1st to 2nd similar to those of *mirabilis*, 3rd elongate and conical, thickened distally, 4th elongate and conical, relative length (width) of each segment from base to apex: 0.1 (0.3): 0.3 (0.3): 0.7 (0.4): 2.2 (0.8).

Prothorax and, meso- and metasterna similar in structure to those of *mirabilis*. Elytra (Figs. 4 C, 5 C) each with a small nodule on posterior margin, and with a triangular trichome just behind the nodule. Legs short, mid femora (Fig. 3 D) swollen medially, with a large and internally curved spine at basal 1/3 on hind margin.

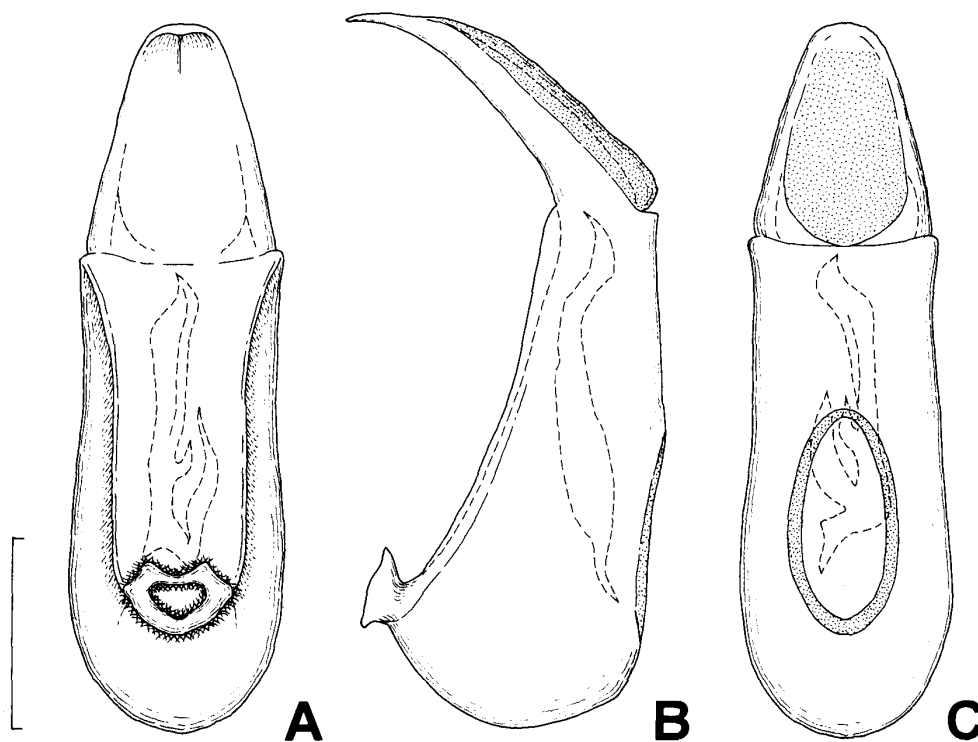


Fig. 7. Aedeagus of *M. loebli* sp. nov. — A, Ventral view; B, lateral view; C, dorsal view (scale: 0.1 mm).

Abdomen similar to that of *mirabilis*, but the composite tergum (Figs. 4 C, 5 C) is very sparsely covered with long and bold hairs in posterior half, with a pair of basi-median trichomes each more thickened in posterior part than in *mirabilis*, composite paraterga wider than in *mirabilis*, each with larger paratergal trichome than in *mirabilis* and glabrous and nearly ovoid paratergal disc. Aedeagus (Fig. 7) well sclerotized; median lobe very similar to that of *mirabilis*, but apical lobe less curved ventrally near apex, endophallus weakly sclerotized, elongate and bifurcate at base.

*Female.* Unknown.

Holotype ♂ (preserved in Muséum d'Histoire Naturelle, Genève), Fenchihu, 1400 m, Taiwan, iv–vi. 1977, J. & S. Klapperich leg. Paratype: 1♂, same data as holotype.

*Distribution.* Taiwan.

*Remarks.* This new species is very similar to *mirabilis* in habitus; however, it differs by the third and fourth antennal segments each conical, and by the small nodules at the base of the elytral trichome.

*Etymology.* This new species is dedicated to Dr. Iwan Löbl for his kind assistance in this study.

#### A Key to the Species of *Micrelytriger* from Japan and Taiwan

1. Elytra strongly projected dorso-laterad, each with a vertically thickened trichome at hind margin; mid femora strongly bent, each with a short and curved spine near the base in male. .... *M. nakatai* sp. nov.
- Elytra weakly convex, each with a triangular or conical small trichome at hind margin; mid femora weakly bent, each with a curved spine near the middle in male. .... 2
2. Third antennal segment short and conical, 4th large and conical; elytra shortened, each elytron with a small and transverse nodule at postero-median part. .... *M. loebli* sp. nov.
- Third antennal segment short and nearly ovoid, 4th large and elongate, narrowed in basal half, then strongly thickened in apical half; elytra strongly shortened, each elytron with a round expansion in postero-median part. .... *M. mirabilis* sp. nov.

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